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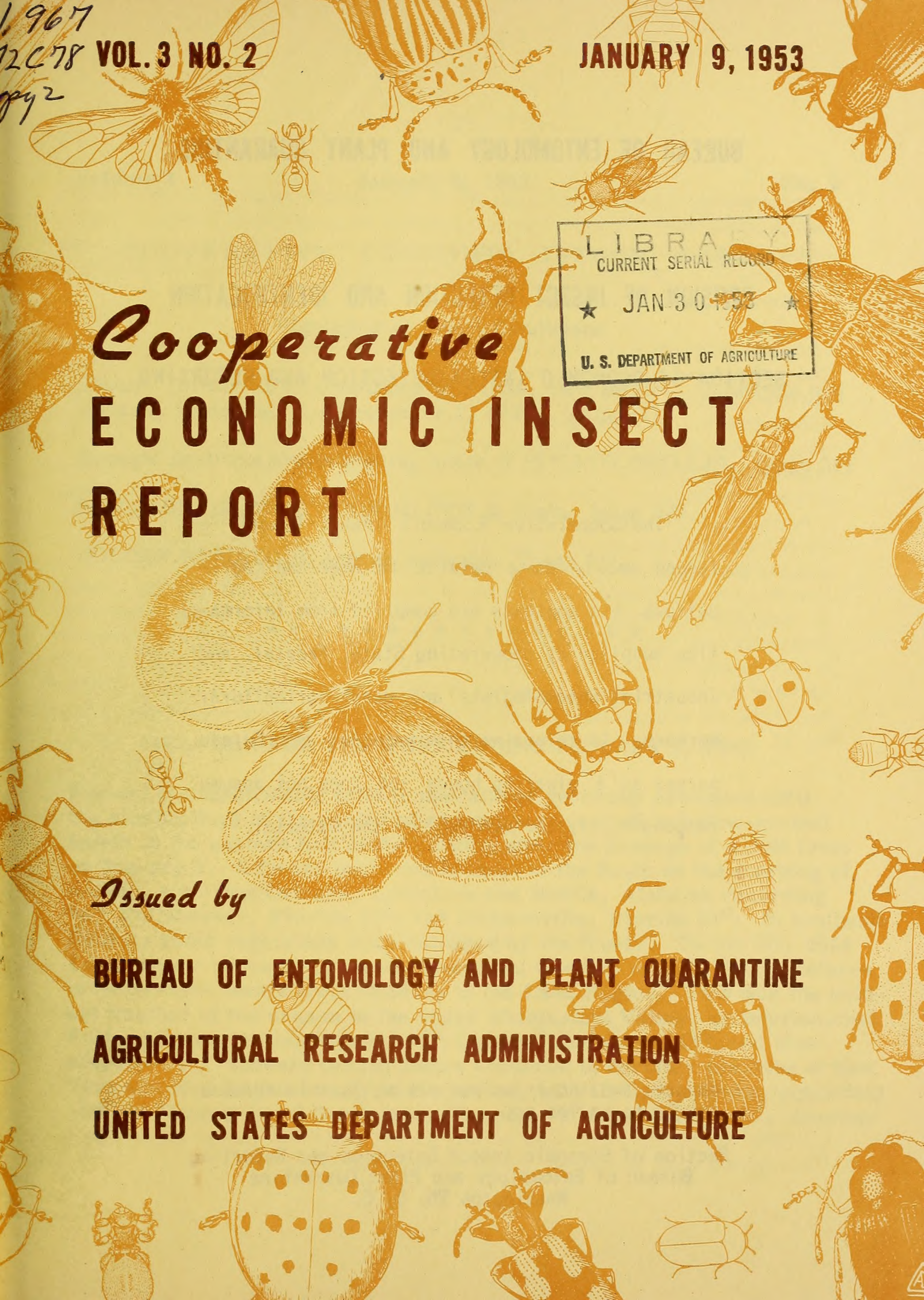

VOL. 3 NO. 2

JANUARY 9, 1953

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U. S. DEPARTMENT OF AGRICULTURE

Cooperative ECONOMIC INSECT REPORT

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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

DIVISION OF INSECT DETECTION AND IDENTIFICATION

SECTION OF ECONOMIC INSECT DETECTION AND REPORTING

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Bureau serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 3 January 9, 1953 No. 2

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

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WEATHER FOR THE WEEK ENDING JANUARY 6, 1953

Normal to unseasonably mild temperatures generally prevailed until the closing days of the period when temperatures fell to below-normal levels in the eastern half of the country after the passage of a cold front on January 3. A freeze occurred in most of the South on the morning of the 4th, with New Orleans, Louisiana and Mobile, Alabama recording 32°; Tallahassee, Florida 25°; and Jacksonville, Florida 31°. In southern Georgia some vegetables were damaged by the freeze. On the 5th, cold Canadian air overspread the north-central interior reducing temperatures to below-zero levels from Montana to the Lake Region. This was the coldest weather of the season in the upper Mississippi Valley, as International Falls, Minnesota, registered -21°; Duluth, Minnesota -15°; and Minneapolis -4°. Subzero temperatures occurred in northern portions of New York and New England early in the period, with Caribou, Maine, recording -15° on January 1 and Burlington, Vermont -9° on December 31. Average temperatures for the week were 3° to 6° below normal in the Southeast, and in some snow-covered portions of the central Great Plains. Elsewhere averages were generally above with the greatest departures ranging from 6° to 12° in the central and northern Rocky Mountain Region and the extreme northern Great Plains.

Precipitation (water) totals ranged from one-half to over an inch in Pacific Coastal areas, interior portions of Washington and Oregon, and extreme northern Idaho, and in the South, Southeast and along the Atlantic Coast. Elsewhere totals were generally less than one-fourth inch. Precipitation was general from the Mississippi Valley eastward on December 29 and 30 and January 2 and 3, with heaviest amounts in the South and Southeast on December 30 when most stations recorded over an inch. New Orleans, Louisiana, recorded 4.57 inches during a 24-hour period on December 29 and 30, the second greatest 24-hour amount ever recorded at that station during December. Precipitation was general west of the Continenta Divide at the beginning of the period and occurred in the Pacific Northwest at frequent intervals throughout the week. On January 2 and 3 eastern Pennsylvania, most of New Jersey, and southern New England received 1 to 2 inches of snow but it melted before the end of the period. Flurries or very light snow were frequent in north-central sections, and much of the Midwest was snow-covered at the end of the period. (Summary Supplie By U. S. Weather Bureau)

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Reports in this issue are for the week ending January 3 unless otherwise designated.

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CEREAL AND FORAGE INSECTS

LUPINE MAGGOT (Hylemya lupini) -- FLORIDA - Second-generation flies laying eggs in Quincy area. (F. E. Guthrie)

SMALL GRAIN PEST CONDITIONS IN TEXAS, NEW MEXICO, OKLAHOMA, AND KANSAS, SEPTEMBER 1 TO DECEMBER 1, 1952 [1]

Compiled by R. G. Dahms

Small Grain Conditions

Precipitation over the wheat producing area of Texas, New Mexico, Oklahoma, and Kansas was far below normal during the summer and fall months. There were some light rains over most of the area in August and fairly good seed beds were prepared, but in many areas the precipitation was not sufficient to cause the growth of volunteer grain. During the first week in September a good rain was received in the Dalhart, Dumas, and Stratford area of the Texas panhandle, and some of the early seeded fields emerged to a good stand and made fairly good early growth. There were some light scattered showers over some of the four-state-area during the week of September 15. In some scattered areas in southwestern Kansas, northern part of the Oklahoma panhandle, and in the Enid and Tonkawa, Oklahoma area this moisture was sufficient to germinate wheat. From the middle of September to November 22 practically no precipitation was received in any of the wheat growing areas of Texas, Oklahoma, New Mexico, and Kansas. Beginning on November 22, precipitation in the form of rain or snow was received over all the wheat producing area of the four states. Surface moisture is now adequate to germinate the seed, except in a few places in western Kansas where high winds blew the snow off the fields. The rains, however, have not been sufficient to replenish sub-soil moisture. An area in central Texas which includes the counties of Hays, Comal, Bexar, Kendall, Kerr, Gillispie, Mason, Menoid, Concho, and Rennels has had sufficient fall rain to produce growth of small grain.

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[1] Information supplied by N. E. Daniels, Texas Agricultural Experiment Station; T. L. Harvey, New Mexico Agricultural Experiment Station; R. H. Painter, E. W. Tilton, W. W. Franklin, E. K. Horber, and J. H. Schesser, Kansas Agricultural Experiment Station; W. O. Ridgway, H. L. Chada, C. F. Henderson, R. V. Connin, and R. G. Dahms, BEPQ; and E. A. Wood, Jr., BEPQ and Oklahoma Agricultural Experiment Station.

Small Grain Pest Conditions

FALL ARMYWORM (Laphygma frugiperda) caused some injury to wheat in southwestern KANSAS, especially in Haskell, Grant, and Hamilton Counties. Insecticides for control were applied to a few fields, but no extensive damage occurred.

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) was observed in several volunteer fields and some early seeded wheat fields in KANSAS, OKLAHOMA, and TEXAS. Some injury due to this insect was observed in Riley County, Kansas and Noble County, Oklahoma. It was also observed in Marion, Ottawa, and Clark Counties, Kansas; in Beaver and Major Counties, Oklahoma; and in Lipscomb and Ochiltree Counties, Texas.

GRASSHOPPERS (primarily Melanoplus mexicanus) caused some injury to margins of small grain fields in Cimarron, Texas, and Beaver Counties, OKLAHOMA; Haskell, Grant, Stephens, Seward, Lane, Scott, Wichita, and Greeley Counties, KANSAS: Hardeman, Childress, Hall, Donley, Armstrong, Potter, Randall, Swisher, Briscoe, Floyd, Hale, Lamb, Castro, Moore, Hartley, Dallam, Sherman, Hansford, Ochiltree, Lipscomb, Hemphill, Roberts, Gray, Carson, Oldham, Deaf Smith, and Parmer Counties in TEXAS.

GREENBUG (Toxoptera graminum) -- No greenbugs were found any place in TEXAS during the fall. A few observed in Kay County, OKLAHOMA in September, but none found in October or November. Greenbugs were first collected in the Clovis, NEW MEXICO area on November 6 and by the last week in November, there was approximately one greenbug to four linear feet of drill space in some fields. Greenbugs were observed in Norton, Geary, Riley, Graham, Thomas, Rawlins, Marshall, Republic, Washington, Atchison, Brown, Jackson, Nemaha, and Pottawatomie Counties in KANSAS during September or October. Although the insects apapeared to be rather generally distributed over northern and northeastern Kansas, they were not found abundant in any area. Greenbugs were also found in October in Thayer, Filmore, Saline, Lancaster, Gage, Johnson, Nemaha, and Otol Counties in NEBRASKA; Nodaway, Andrew, and Buchanen Counties in MISSOURI; and Fremont County, IOWA.

OTHER APHIDS have been relatively low in number. A few crown aphids (*Rhopalosiphum subterraneum*); some corn leaf aphids (*Aphis maidis*); and one colony of root aphid (*Forda* sp.) were found in northwestern KANSAS in September. The apple grain aphid (*Rhopalosiphum prunifoliae*) was found in one field in Harper County, OKLAHOMA in October. One English grain aphid (*Macrosiphum granarium*) and a few corn leaf aphids were found in the Clovis, NEW MEXICO area in October. A few corn leaf aphids were found in November in the San Marcos, San Antonio, Comfort area of central TEXAS.

LEAFHOPPERS -- Several unidentified species were observed in most fields of small grain in TEXAS and OKLAHOMA and southwestern KANSAS during September, October, and November. Several species were also observed in northwestern KANSAS. Nymphs of *Endria* were collected near the Norton, Kansas fly nursery and south of Hoxie, Kansas. This species also has been quite numerous in some areas in Riley County. In several fields in the Clovis, NEW MEXICO area, an average of 85 leafhoppers per 100 sweeps was found. *Psammotettix* spp. appeared to be the most abundant, but *Exitianus exitiosus*, *Nesosteles* spp., *Empoasca* spp. and members of Agalliini were common.

SPIDER MITES -- Several species of these pests have been found attacking small grains during the fall months, and some rather detailed surveys have been made. CLOVIS, NEW MEXICO AREA - Two species of spider mites (*Paratetranychus pratensis* and *Petrobia latens*) were found in this area. *Petrobia* has not been as numerous as *Paratetranychus*, although an accurate count of *Petrobia* was not obtained by the method used since this species readily dropped from the plants. *Paratetranychus* produces considerable webbing and few, if any, mites were lost when the plants were cut and brought into the laboratory for examination. On September 17 only about 10 percent of the plants were infested with mites, but by October 22 the infestation reached approximately 90 percent. On November 17, 370 specimens of *Paratetranychus* and 22 of *Petrobia* were counted on 100 plants. Some of these plants showed considerable chlorosis at the base of the leaves. TEXAS - Unidentified mites were found in most fields in the San Marcas, San Antonio, and Comfort area of central Texas in November. *Petrobia latens* was found in most continuous wheat fields in the Stratford, Dumas, and Amarillo area of the Texas panhandle in November. In most of these fields there were approximately 5 per linear foot. OKLAHOMA - *Petrobia latens* also found in October in most fields examined in Harper, Beaver and

Texas Counties in Oklahoma, but none observed in the Enid or Stillwater areas. KANSAS - Two-spotted spider mite (Tetranychus bimaculatus) was fairly common on some volunteer wheat in northwestern Kansas during September.

Mr. C. F. Henderson and E. W. Tilton have made a detailed survey of Petrobia latens in southwestern KANSAS and have made the following report:

Egg populations - For the first time, population surveys were conducted to determine the distribution and abundance of the summer eggs of P. latens in fields of wheat stubble. These surveys were made possible through the development of an extracting apparatus which was used to remove the mite eggs from the plant and underlying soil samples for counting. The surveys were conducted in 17 counties of southwestern Kansas from August 29 to September 2. Five clumps of dry wheat stubble, plus a 2 x 5-inch core of underlying soil, were removed from each sampled field for later counting. In the area surveyed, 82 fields were visited or an average of approximately 5 fields per county. The average numbers of mites per plant and underlying soil in 8 survey lines covering the area were as follows: Garden City to Hugoton via Lakin and Ulysses, 501; Richfield to Leoti via Johnson, Syracuse, and Tribune, 447; Leoti to Lakin, 207; Garden City to Scott City, 413; Garden City to Liberal, 857; Liberal to Meade, 1,734; Meade to Ness City via Cimarron and Dighton, 430; and Ness City to Englewood via Dodge City, 255. The highest populations of P. latens eggs were in the vicinity of Liberal and Meade, and the lowest in the northeast corner of the area surveyed. This agrees in general with the distribution of this species during the spring of 1952. These figures should be of value in comparing populations this year with those of future years.

Populations in volunteer wheat - During September 30 to October 2, surveys were conducted to determine the populations of P. latens on volunteer wheat in stubble fields, and in fields that had been one-wayed after harvest of the 1951-52 wheat crop. Rains occurring during the latter part of August had germinated the volunteer wheat and had caused many of the brown wheat mite eggs to hatch. The survey was made in 12 counties of southwestern Kansas over somewhat the same area covered by the egg survey, with the exception of the extreme southwestern and eastern portions where, due to lack of moisture, volunteer wheat had not germinated. Four fork-samples constituting a 20-sq.-inch sampled area were taken in each field visited, and 75 fields were sampled in this manner. The average number of mites per 20-sq.-inch sampled area were as follows: Kalvesta to Liberal via Cimarron and Meade, 23; Garden City to Liberal, 46; Sublette to Kalvesta via Ulysses, Lakin, Garden City, Scott City, and Dighton, 16; and Lakin to Syracuse via Leoti and Tribune, 16. This was an average of 25 mites per sample. Although this method of sampling was not available last year at this time, no P. latens were found in visual observations over the same areas. When the mites on the fork samples were counted, they were separated into small and mature stages. At this time of year 85.2 percent were small and 14.8 percent mature. Apparently, these mites had hatched from the summer eggs.

Populations in fall-planted wheat - During October 7 to November 14, surveys were made in 13 counties of southwestern Kansas to determine the number of P. latens per plant in fall-planted wheat. As the plants were too small and flat to sample with the fork or card methods, actual counts were made in four 2 1/2-foot strips of planted rows in each field. In making these counts a Magni-focuser was used. The plants in each sampled area were then counted, and the number of mites recorded per plant. In 70 fields surveyed for populations by this method, the following numbers of mites were found per plant: Garden City to Sublette, 4.45; Sublette to Ulysses, 0.50; Sublette to Cimarron via Liberal and Meade, 1.86; Ulysses to Cimarron via Lakin, Garden City, Scott City, and Dighton, 0.13; Lakin to Syracuse via Leoti and Tribune, 0.23; Cimarron to Sublette via Montezuma and Copeland, 2.12; and Sublette to Hugoton, 0.80. The area between Garden City and Sublette was surveyed on October 7 and again on November 14, and populations in 6 fields of continuous wheat and 6 adjacent fields planted on previously-fallowed land were compared on the two dates. On the former date there was an average of 4.45 mites per plant on the continuous wheat and 0.02 on the fallow-land wheat. On the latter date there were 5.56 mites per plant on the continuous wheat and 0.91 on the fallow-land wheat. This further indicates that the mites were carrying over from one crop to the next as eggs in the stubble fields.

WHITE GRUBS -- Unidentified species were reported from Barton and Rush Counties, KANSAS, and one field that had an extremely heavy infestations was observed in Kay County, OKLAHOMA.

WIREWORMS - Some wireworms were observed in October in Kay, Garfield, Major, and Woodward Counties in OKLAHOMA. False wireworms were reported from several areas in central KANSAS.

FRUIT INSECTS

A WEEVIL (Heilipus squamosus) -- FLORIDA - Less abundant on avocados than three years ago in Homestead area. (D. O. Wolfenbarger, December 22)

AVOCADO RED MITE (Paratetranychus yothersi) -- FLORIDA - Increased in abundance within the last month on avocados in Homestead area. Also increasing on mangoes. (D. O. Wolfenbarger, December 22)

TRUCK CROP INSECTS

SERPENTINE LEAF MINER (Liriomyza pusilla or related thereto) very prevalent and injurious in some tomato fields in Homestead, FLORIDA area. (D. O. Wolfenbarger, December 22)

SPIDER MITES -- TEXAS - Heavy infestations have been found in a few fields of cucumbers. (Wene and White)

ONION THRIPS (Thrips tabaci) -- TEXAS - Occurring on onions in Lower Rio Grande Valley and a few fields need insecticidal treatments. (Wene and White)

VARIEGATED CUTWORM (Peridroma margaritosa) -- TEXAS - Causing considerable damage to beets in Lower Rio Grande Valley. (Wene and White)

CABBAGE CATERPILLARS -- TEXAS - Heavy infestations of cabbage looper (Trichoplusia ni) and diamondback moth (Plutella maculipennis) occurring on cabbage in Lower Rio Grande Valley. (Wene and White)

VEGETABLE WEEVIL (Listroderes costiriostris obliquus) -- FLORIDA - Populations have increased on turnips and Chinese cabbage in Gadsden County and adjacent areas. The larger fields of turnips are heavily infested around the ends and sides of fields. In gardens the infestations are disastrous to turnips. (L. M. May)

Drought destroys overwintering hosts of potato psyllid: A survey in November showed that wild host plants of potato psyllid (Paratrioza cockerelli) in southern Texas and southern New Mexico are almost completely defoliated. The drought which has prevailed in that area for several months has nearly eliminated these overwintering hosts, consisting principally of wild matrimony vine (Lycium spp.). Very few psyllids were found, and all of these in the vicinity of El Paso, Texas, and Las Cruces, New Mexico, where irrigation had counteracted the drought. These plants, however, will be dormant within the next few weeks, and unless those in the Del Rio, Texas, area recover there will be practically none upon which the psyllids can survive the winter. Host plants in this overwintering area were adversely affected by cold weather early in 1951 and by drought early in 1952. Subsequent populations of the psyllid in the summer breeding areas of Colorado, Wyoming, and Nebraska, were very low during 1951 and 1952. (R. L. Wallis)

FOREST INSECTS

A NEEDLE MIDGE (Itonida sp.) -- Two widely separated outbreaks in Douglas-fir stands have been investigated at Newport, WASHINGTON and Rexford, MONTANA. The full extent of the outbreaks have not been determined, although several thousands of acres are known to be heavily infested. Much concern was shown by Christmas tree operators, where the cutting of Douglas-fir had been curtailed greatly because of the disfiguring damage and needle drop caused by this insect. Little is known about the life history of the insect or the extent of its range. This genus has never been reported attacking Pseudotsuga. Evidently the midge does not mine within the needles of Douglas-fir, but develops in place on the needle sap after hatching from eggs laid within needles of the current season. This results in a yellowed area which, in heavy infestations, extends the entire length of the needle and kills it. (R. E. Denton, December 6)

SUMMARY OF INSECT CONDITIONS - 1952

UTAH

Reported by G. F. Knowlton,
H. E. Dorst, F. V. Lieberman

Cereal and Forage Insects: ALFALFA WEEVIL (Hypera postica) caused damage in only a few alfalfa fields in 1952. Weather conditions favored luxuriant growth which hindered weevil development; however, because of the tardiness of weevil development, unusual numbers of overwintered adults persisted into late summer and laid more eggs than normal in the second-crop period. This late oviposition generally means an increase in adult weevil population going into winter and widespread damage could occur in 1953. LYGUS BUGS (Lygus spp.) were very abundant, with unusually large populations of both adults and nymphs. The most troublesome factor was the large and persistent reinfestation of seed alfalfa by adults after fields had been treated for lygus control. A LEAFHOPPER, Dikraneura carneola, caused damage during the summer to small grains in many parts of the State. Extremely abundant in some fields of alfalfa, potatoes, and celery during the fall. LEAFMINERS were common in alfalfa in most areas, but no serious damage observed. GREENBUG (Toxoptera graminum) was not observed in damaging abundance on small grains in either 1951 or 1952. YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) caused first economic damage to alfalfa since 1947. CORN EARWORM (Heliothis armigera) infestation on canning corn was approximately 100 percent and was similar to infestations of 1941, 1948, and 1949. Infestations in 1950 and 1951 were 6 and 10 percent respectively. Infestations in 1952 occurred in tassels and leaves previous to production of silks, particularly in the early part of the season.

Fruit Insects: CURRANT FRUIT FLY (Epochra canadensis) -- Twenty to 40 percent infestation in currant fruits was common on untreated trees growing along fence lines. SHOT-HOLE BORER (Scolytus rugulosus) damage to peach, apricot and cherry less than normal this season. PEACH SILVER MITE (Vasates cornutus) infestations were observed this season in Washington and Weber Counties.

Vegetable Insects: TOMATO FRUITWORM (Heliothis armigera) infestation on tomatoes averaged about 10 percent with a range from 2 to 35 percent. This was the highest infestation since 1941. Infestation in 1951 was less than 1 percent. Heaviest infestation in 1952 occurred in late September and early October. GREEN PEACH APHID (Myzus persicae) and other aphids caused little damage to celery in 1952. PEA WEEVIL (Bruchus pisorum) infestations were high and widely distributed during 1952. Weevil populations on canning peas have been above normal for the past several years requiring insecticide applications.

Insects Affecting Man and Animals: HOUSE FLY (Musca domestica) was very abundant in many parts of the State in 1952. HORSE FLIES (Tabanidae were moderately abundant.

Insect conditions in Utah during 1952 were unusually severe compared to most seasons. The following pests were particularly heavy: Say stink bug, beet leafhopper, corn earworm, lygus bugs, Mormon crickets, grasshoppers, yellow-striped armyworm, false chinch bug, painted-lady, common white butterfly, the leafhopper (Dikraneura carneola), white-lined sphinx larvae, brown wheat mite, house flies and blow flies, thrips on small grains and in some cases on alfalfa, spider mites on ornamental conifers, loopers on alfalfa and lettuce, European earwig, boxelder bug and Great Basin tent caterpillar. Pea aphid, beet webworm, tomato russet mite, army cutworm, were less than normal.

Livestock pests have been about normal in population with some spreading of ear tick evident.

SURVEY METHODS

GOLDEN NEMATODE (*Heterodera rostochiensis*)

Survey inspections to detect the presence of golden nematode cysts may be accomplished by field soil surveys, grader debris examination, and plant root examination.

Field survey consists of systematically collecting about six pounds of soil per acre. About a tablespoonful of soil is picked up with a pointing trowel at intervals of eight paces following a grid pattern. The soil is collected in a No. 12 wet-strength double-thickness paper bag, which is numbered to show location of the sample within the field and also labeled to identify the field. A sketch is made of the field showing the areas represented by each sample. The tops of the bags containing the soil are carefully folded and sealed with paper adhesive tape, to prevent leakage, and stored until processed in the laboratory. When a field or portion of a field is under suspicion or shows symptoms of infestation, it is advisable to inspect it intensively. This is accomplished by dividing the field into smaller blocks and collecting samples at intervals of four or two paces, in which case four or sixteen times as much soil is obtained per acre by the eight pace method. Field survey work can be performed at times when the ground is not frozen, too wet, or when crops do not interfere.

Grader sampling consists of the collection of soil that has accumulated under the potato grader, under the loading belt, in the storage bin, or in any location where potatoes are concentrated in quantities. It is found generally that such debris has a high content of potato vines, sticks, stones, potato skins, and other extraneous offal. Care is taken to exclude this type of debris, in other words, as much soil as possible is secured. In cases where large quantities of soil are available, it is desirable to obtain two or more samples. Each bag is filled to a depth of four to five inches and the top folded and sealed with tape. The bags are given a collection and sample number which will clearly indicate the location of the grader or storage house and date collection was made.

Following the collection, the soil samples are processed in the laboratory by a soil washing method to determine the presence or absence of golden nematode cysts.

The method of examining potato roots may be used to advantage under certain conditions. Fields are looked over carefully and patches showing plants with weak spindly stems and stunted tops are selected. Examinations also are made around buildings or where grader debris has been disposed of on fields. The plants are carefully removed from the soil and the roots examined for cysts. A 10X hand lens is helpful. The work is limited to a period of about two weeks when the swollen female has emerged, but has not become detached from the root. The cysts can be seen about the time blooms appear on the potato plants.

In consideration of the characteristics and potentialities of dissemination, every reasonable precaution should be taken to prevent the spread of this organism. Vehicles assigned to survey should not be permitted to enter any property. They should remain on paved highways or recognized thoroughfares. Trowels must be free of soil collecting recesses and grooves, and brushes should be provided for the cleaning of inspectors' shoes after leaving fields or potato storage houses. It is advisable for inspectors to wear trousers free of cuffs. Vehicles used on survey must be cleaned periodically by washing and should be kept free of soil at all times. Vehicles used in connection with infested properties must be steam cleaned prior to use on non-infested lands.

Further details on the survey and soil processing methods are contained in "Manual of Survey and Laboratory Methods Used by Golden Nematode Control," a copy of which may be obtained by writing to the Golden Nematode Control Project, P. O. Box 104, Hicksville, L. I., New York. (J.F.Spears